50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Finding on Petition to List the Paddlefish

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of petition finding.

SUMMARY: The U.S. Fish and Wildlife Service announces a 90-day petition finding for a petition to amend the list of Endangered and Threatened Wildlife and Plants. The petitioner presented substantial information which indicates that the petition to list the paddlefish (*Polyodon spathula*) may be warranted for at least some populations. A status review was initiated on December 30, 1982, and the Service seeks information until June 1, 1990.

DATES: The finding announced in this notice was approved on April 2, 1990. Comments and information may be submitted until June 1, 1990.

ADDRESSES: Questions or comments concerning this finding should be submitted to the Missouri River Coordinator, Fish and Wildlife Enhancement, P.O. Box 986, Federal Building, Pierre, South Dakota 57501. The petition, finding, and supporting data are available for public inspection, by appointment, during normal business hours at either of the following Fish and Wildlife Enhancement Offices: Suite 405, 134 Union Boulevard, Lakewood, Colorado (mailing address: P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225), or room 308A. Federal Building, 225 South Pierre Street, Pierre, South Dakota.

FOR FURTHER INFORMATION CONTACT: Dr. Kent D. Keenlyne at the Pierre address above (605/224–8693).

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(A) of the Endangered Species Act (Act) of 1973, as amended in 1982 (16 U.S.C. 1531 *et seq.*), requires that the U.S. Fish and Wildlife Service (Service) make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information to demonstrate that the petitioned action may be warranted. To the maximum extent practicable, this finding is to be made within 90 days of receipt of the petition, and the finding is to be published promptly in the **Federal Register**. If the finding is positive, the Service is also required to promptly commence a review of the status of the involved species. In the case of the paddlefish, a status review was initiated by a Notice of Review published December 30, 1982 (47 FR 58454).

The Service has received and made a 90-day finding on the following petition:

A petition dated June 29, 1989, was received from Mr. Steven G. Moore on July 6, 1989. The petition requested the Service to list the paddlefish (*Polyodon spathula*) as a threatened species.

The petition stated that the paddlefish is presently known from 22 States in the interior continental United States (States are listed in later discussions). The petition and referenced documentation indicated that the survival of the species is threatened by a declining population, having already been extirpated in Canada, New York, Maryland, North Carolina, and Pennsylvania, with declining populations in seven other States (Alabama, Illinois, Kansas, Ohio, South Dakota, Texas, and West Virginia). Threats described include historical, ongoing, and continuing loss of habitat; past overharvest by commercial means and continuing inadequate control of commercial harvest; a weakening of the gene pool by present artificial propagation programs with a possible threat to longer range survival; and inadequate regulations to protect the species.

The paddlefish is the only species of the family Polyodontidae found in North America. It is found mostly in the large river systems of the Mississippi River Basin and in some Gulf of Mexico drainages. A recent study in Missouri determined that there are genetically identifiable differences in Gulf drainage stocks, Montana/North Dakota stocks, and the remaining interior stocks. Thus, distinct identifiable populations exist for the species.

In the last 50 years, most of the river systems constituting the paddlefish's habitat have been channelized or

dammed, which has increased water currents and altered natural flows, temperature regimes, and spawning areas. Individuals do well in suitable impoundments but must have access to large, free-flowing rivers to spawn. Spawning needs are very specific and include water temperatures near 50°F, clean gravel substrate for egg attachment, and increased water flow to trigger spawning. These conditions may no longer exist throughout most of the Missouri River from Garrison Dam in North Dakota to the mouth at St. Louis, Missouri, and in the Mississippi River from Minneapolis, Minnesota, to St. Louis, Missouri, at suitable frequency to maintain the species or populations of the species. This is a reach of approximately 1,400 miles of historical habitat on the Missouri River and about 650 miles on the Mississippi River. Only five natural spawning areas, two of which are in the above mentioned reaches of the Missouri and Mississippi Rivers, are known throughout the range of the species (the Upper Mississippi River near Iowa and Illinois; the White River in South Dakota; the Cumberland River in Tennessee; the Neosho River in Kansas; and the Missouri River in Montana). Since small fish have been observed in other areas, they presumably also are spawning in other, as yet, unidentified locations. With such exact spawning requirements, any habitat alteration, either new or ongoing, which adversely affects these relatively limited remaining natural spawning areas can severely affect the welfare of the fish.

A closely related issue involves the species' relatively low reproductive potential. Paddlefish may live as long as 30 years, with males attaining sexual maturity in 7 to 9 years and females maturing in 10 to 12 years. Once sexual maturity is obtained, females normally require intervals of 2 or more years to reach spawning condition, indicating that under optimum conditions a female paddlefish would spawn fewer than 10 times during her lifetime. This low reproductive potential, in combination with the narrow range of conditions necessary to ensure a successfuil spawn, plus extremely low numbers of naturally reproducing populations and relatively small numbers of individuals comprising these populations, suggests that the species' ability to maintain its existence (without supplemental stocking) is reduced considerably. Only a few years of poor production or a combination of overharvest (legal or illegal) and poor production would likely bring the species to the brink of extinction throughout a considerable portion of its present range.

Populations have declined notably in certain areas in recent years. The paddlefish population in Lake Francis Case, a Missouri River Reservoir in South Dakota, has declined since the closure of Oahe Dam in 1958 and Big Bend Dam in 1963 (both are upstream of Lake Francis Case). Shortly after closure, a significant fishery developed in the tailwaters of these dams. Based on sport catches, harvests decreased from 4,400 in 1962 to 700 by 1963 in the Oahe tailwaters and 2,831 in 1971 to 132 by 1979 in the Big Bend tailwaters. No sport fishery exists at either site at present. In the Lake of the Ozarks, an Osage River Reservoir in Missouri, a similar situation may be developing. This lake was created in 1931, and the paddlefish population increased in the more productive reservoir. Spawning was successful because the fish could move into suitable upstream areas. The construction of the Harry S. Truman Dam upstream from the Lake of the Ozarks, however, has eliminated fish movements upstream, and sport fishing is presently limited to the Truman Dam tailwaters. In the Mississippi River above St. Louis, commercial harvest of paddlefish has declined 62 percent from around 1900 to 1980, largely due to construction of dams and channelization of the river for commercial navigation.

As of 1989, of the 22 States still having paddlefish populations, 8 (Arkansas, Iowa, Kentucky, Mississippi, Missouri, Montana, Oklahoma, and Tennessee) allowed commercial and sport fishing harvest of paddlefish; 8 (Indiana, Kansas, Nebraska, North Dakota, Ohio, South Dakota, Virginia, and West Virginia) allowed sport fish harvest only; 1 (Illinois) allowed commercial harvest only; and 5 (Minnesota, Wisconsin, Alabama, Louisiana, and Texas) did not allow either sport or commercial harvest. Diligence on the part of the States to improve water quality and to better manage the paddlefish resource has allowed it to possibly expand its range in the southeast and in the Upper Mississippi River. And, though there is not sufficient evidence to demonstrate overexploitation by legal fishing means, illegal harvest has become a major concern. In April 1989, undercover agents in Missouri arrested 2 men for nearly 200 Federal and State violations. The agents worked on the case for over a year and documented a wide network of those who buy and sell illegal eggs. One netter claimed having taken 5,000 pounds of paddlefish eggs from Table Rock Lake, Missouri. At 8 to 10 pounds of eggs per female fish, they poached about 500 to 600 female fish, and probably as many males, from this lake alone. Between April and June 1989, almost a dozen other individuals pleaded guilty or faced charges in State courts for illegal harvest of paddlefish for commercial purposes in Missouri.

Paddlefish roe (eggs) is valuable as caviar, and premium quality paddlefish caviar can net the seller between $300 and $500 retail per pound. This represents a significant increase from the $50 to $70 per pound price of a few years ago. Increased prices have led to additional pressure for legal commercial harvest, as well as increased poaching throughout the species' range. The leading supplier of paddlefish caviar has indicated that demand has increased from about 12,000 pounds to 22,000 pounds of paddlefish caviar per year. The species is well noted as being especially vulnerable to illegal harvest methods, and enforcement of poaching laws is made more difficult in States where the commercial sale of paddlefish, or parts thereof, is legal.

As the petitioner noted, artificial propagation may affect the gene pool and the long range survival of a species. A loss of genetic material could occur if brood stocks are made up of only a few individuals (inbreeding), and a disruption of genetic material could be caused by the mixing of nonadapted genes with those adapted to environments where introductions occur. Although an item of concern, this cannot be considered a threat until more is known about the distribution of genetic material within and between paddlefish populations, the movements and migrations of paddlefish, and the relationships of movements and migrations to reproduction.

Habitat loss, particularly crucial spawning and nursery habitat, is the most serious threat to paddlefish existence as a self-sustaining biological entity. Past habitat losses greatly affect the paddlefish's present geographic distribution. Although paddlefish populations in 15 of the 22 States comprising the present distribution of the species are presently considered stable or increasing, a number of these populations are dependent upon supplemental stocking of hatchery produced fish to maintain sufficient numbers for commercial or sport harvest. If supplemental stocking was discontinued, paddlefish populations and distribution would be limited primarily to a few States that maintain spawning populations or have populations supported by recruitment from existing stocks. Present spawning

populations may be sufficiently isolated geographically so that little or no gene flow occurs among the various stocks. If evaluated solely on sustained "natural" distribution, there may be several other areas within its range where the species may not be able to continue to exist. The effects of supplemental stocking, both on distribution and abundance, and the mixing of gene pools will need to be cautiously evaluated when determining the status of the paddlefish and to assess the magnitude of other identified threats.

Several introduced fish species have become established in the Mississippi River system that could be in direct competition with the paddlefish for food or as a new threat preying upon eggs in the limited areas of natural reproduction. Of particular concern is the big-headed carp (introduced from Asia), which is reproducing as far north as Missouri and which apparently feeds at the same trophic levels as the paddlefish.

After a review of the petition, accompanying documentation, and references cited therein, the Service has found that the petition presented substantial information that the requested action may be warranted for at least some populations. Within 1 year from the date the petition was received, a finding as to whether the petitioned action is warranted is required by section 4(b)(3)(B) of the Act.

Author

This notice was prepared by Dr. Kent D. Keenlyne, Pierre, South Dakota (see **ADDRESSES**).

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531–1543).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Fish, Marine mammals, Plants (agriculture).

Dated: April 17, 1990.

Richard N. Smith,

Acting Director, U.S. Fish and Wildlife Service.

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